

MINOR NOTICES

Index Filicum.—In 1905 CARL CHRISTENSEN published his *Index Filicum*, and now a supplement has appeared,⁶ covering the period 1906–1912. The two parts are (1) the supplement, which contains all the names of ferns published during 1906–1912, and (2) corrections. In the supplement there are enumerated 33 names of new genera and subgenera that have been proposed. The number of species described as new during the period covered, and adopted in the supplement, is 1644. Eliminating the older species that have been reduced to synonyms, and adding the new ones, the number of species of ferns recognized by CHRISTENSEN at the end of 1912 is 7411.—J. M. C.

The fresh-water flora of Germany, Austria, and Switzerland.—Part 14 of this series of brochures has now appeared.⁷ The four previous parts have been noted in this journal.⁸ The present part presents the Bryophytes, and the keys, descriptions, and excellent illustrations should make their identification comparatively easy. The genera and species presented under the three groups are as follows: Sphagnales, 48 species; Bryales, 50 genera and 131 species; Hepaticae, 25 genera and 60 species.—J. M. C.

NOTES FOR STUDENTS

Natural vegetation and crop production.—In a careful study in one of the broad valleys in the Great Salt Lake Basin, KEARNEY⁹ and his associates have shown that the natural vegetation of the area is so reliable an indication of the physical and chemical conditions affecting plant life that it affords an excellent basis for estimating the capabilities of the land for crop production. The report gives a good example of the quantitative investigation of the moisture and salt contents of the soil and the efficiency of the wilting coefficient in expressing the relation of the soil moisture to plant life and growth. Nearly all of the plant associations considered are dominated by a single species and very definitely limited in their extent.

The sagebrush (*Artemisia tridentata*) association is found in the higher portions of the valley. With an average precipitation of 40 cm., the growth-water is exhausted early in the summer, as shown by their determinations, but there is no excess of alkali salts. A good development of this association

⁶ CHRISTENSEN, CARL, *Index Filicum. Supplementum 1906–1912.* pp. 132. Hafnia, Denmark: H. Hagerup. 1913.

⁷ PASCHER, A., *Die Süßwasser-Flora, Deutschlands, Österreichs, und der Schweiz.* Part 14. Bryophyta, by C. H. WARNSTORF, W. MONKEMEYER, and V. SCHIFFNER. pp. 222. figs. 158. Jena: Gustav Fischer. 1914. M 5.60.

⁸ BOT. GAZ. 56:233. 1913.

⁹ KEARNEY, T. H., BRIGGS, L. J., SHANTZ, H. L., and others. Indicator significance of vegetation in Tooele Valley, Utah. *Jour. Agric. Research* 1:365–417. 1914.